

## Unit 4 Checking & Savings

10/02/14

Please turn in any missing work which you have completed.

## Unit 4 Checking & Savings

10/02/14

### Unit 4 Project

- Choose a partner with whom to work
- Choose a bank or credit union in Denver
- Research savings accounts & checking accounts
- Present findings to class via MS Powerpoint or Google Presentation (1 slide about institution + 1 slide per account)
- Due Friday, 10/17/2014

## Unit 4 Checking & Savings

10/02/14

### Unit 4 Project

#### Banks

- FirstBank
- US Bank
- Key Bank
- Chase Bank
- Compass Bank
- Citywide Bank
- Colorado  
Business Bank
- The Bank of  
Denver
- Wells Fargo Bank

#### Credit unions

- Sooper Credit Union
- Credit Union of Denver
- Denver Community Credit Union
- Bellco Credit Union
- Public Service Credit Union
- Westerra Credit Union
- Credit Union of Colorado

### Unit 4 Project

What you need to find out:

- Are there membership limitations for the institution?
- What types of accounts are available?
- Are there restrictions on certain accounts?
  - Direct deposit
  - Minimum balance
  - Minimum activity
  - Fees
- What incentives are there on the accounts?
  - Toaster, GPS unit
  - Gift card, bonus deposit
- What tools come with the accounts or membership?
  - Check card
  - Online banking

<http://goo.gl/forms/11Z0ix8A9o>



## 4.1 Simple Interest

10/02/14

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.1 Simple Interest

10/02/14

Interest - Percentage added to the principle

Simple interest - Interest that is paid only on the original balance (principle)

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/02/14

$$I = prt \quad \text{Interest} = \text{principle} \cdot \text{rate} \cdot \text{time}$$

$$\text{Total value} = p + I$$

$$\text{future value} = p + prt$$

Compounding period

annually

per year 1

quarterly

4

monthly

12

weekly

52

daily

365

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/02/14

Five year old Johanna deposits \$100 of Christmas money in a savings account which pays 3% simple interest compounded annually. With no further deposits or withdrawals, how much will her account be worth at Christmas when she is 18?

$$P = \$100$$

$$FV = P + Prt$$

$$r = 3\% \text{ annually}$$

$$= 100 + 100 \cdot 0.03 \cdot 13$$

$$t = 13 \text{ yr}$$

$$FV = \$139$$

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/02/14

Jessy deposits \$300 in a savings account which pays 3% simple interest compounded monthly. With no further deposits or withdrawals, how much will the account be worth in eight years?

$$P = \$300$$

$$FV = 300 + 300 \cdot \frac{0.03}{12} \cdot 8 \quad (\cancel{12})$$

$$r = 3\% \text{ monthly comp.}$$

$$FV = 300 + 72$$

$$t = 8 \text{ yr}$$

$$FV = \$372$$

HW: Practice: 4.1.2

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.



## 4.1 Simple Interest

10/02/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.1.2

Quiz 4.1.3

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/03/14

Define simple interest in your own words.

Simple interest is interest paid  
only on the original balance (principle)

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/03/14

### Practice: 4.1.2

7)  $P = 1500$   
quarterly  
 $I = \$9$  in 3 mo  
 $r = ?$

$$I = prt$$
$$\frac{9}{1500} = \frac{1500}{1500} r \frac{1}{4}$$
$$r = 0.006 \times 4$$
$$0.024 = 2.4\%$$

9)  $P = 5000$   
 $I = 170$   
 $t = 2 \text{ yr}$   
 $r = ?$

$$170 = 5000 \cdot r \cdot 2$$
$$\frac{170}{10000} = \frac{10000}{10000} r$$
$$r = 0.017 = 1.7\%$$

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/03/14

### Practice: 4.1.2

10)  $P = 5000$

$$t = 12 \text{ yr}$$

$$r = 4.5\% \text{ semiannually}$$

$$FV = P + I$$

$$FV = 5000 + 5000 \left( \frac{0.045}{2} \right) 24$$

$$FV = \$7,700$$

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.1 Simple Interest

10/03/14

### Practice: 4.1.2

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.



## 4.1 Simple Interest

10/03/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.1.2

Quiz 4.1.3

<http://goo.gl/forms/11Z0ix8A9o>

IWBAT define simple interest, understand simple interest and the formula  $I = prt$ , and practice computing a balance in an account incorporating interest.

## 4.2 Exponential Growth

10/06/14

### Calculate simple interest

Justina opened a savings account with a deposit of \$1,000. Saving for college, she left the money untouched from the time she was 12 until she was 18. This account paid 3.6% annual simple interest compounded quarterly. How much did Justina have in this account for college when she was ready to withdraw the funds?

$$FV = P + I = P + Prt$$

$$FV = 1000 + 216 = \$1,216$$

## 4.2 Exponential Growth

10/06/14

Review of exponents

$$f(x) = b^x$$

$$b^3 = b \cdot b \cdot b$$

## 4.2 Exponential Growth

10/06/14

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.2 Exponential Growth

10/06/14

$$f(x) = a * b^x$$

$a$  = initial amount (principle)

$b$  = rate of change

$x$  = time (number of periods)

Growth:  $b > 1$

Evaluate:

$$a = 500$$

$$b = 1.05$$

$$x = 24$$

5% growth

$$f(24) = 500 \times 1.05^{24}$$

$$f(24) = 1612.55$$

Decay:  $0 < b < 1$

Evaluate:

$$a = 500$$

$$b = 0.65$$

$$x = 24$$

35% decay

$$f(24) = 500 \times 0.65^{24}$$

$$f(24) = 0.016$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.



## 4.2 Exponential Growth

10/06/14

### Rice problem

Linear growth:

Day 1: 1 grain

Day 2: 2 grains

Day 3: 3 grains ...

Exponential growth:

Day 1: 1 grain

Day 2: 2 grains =  $2^1$

Day 3: 4 grains ...

On day 30, how many grains of rice do you have?

30 grains

$$2^{29} = 536,870,912$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

## 4.2 Exponential Growth

10/06/14

$$f(t) = P \left( 1 + \frac{r}{n} \right)^{nt}$$

$n$  = number of compounding periods

$$f(6) = 1000 \left( 1 + \frac{0.036}{4} \right)^{4 \cdot 6} = 1000 (1 + 0.009)^{24}$$

$$f(6) = \$1239.90$$

$$f(18) = \$1906.18$$

simple I \$1648.00

As  $n \Rightarrow \infty$ ,

$$f(t) = P e^{rt}$$

$$f(x) = a * e^x$$

$$f(6) = 1000 e^{(0.036 \cdot 6)}$$

$$f(6) = \$1241.10$$

$$f(18) = \$1911.71$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

## 4.2 Exponential Growth

10/06/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.2.2

Quiz 4.2.3

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

### 4.3 Compound Interest

10/07/14

Evaluate the exponential expressions

$$f(x) = 2^x$$

$$g(x) = \frac{1}{2}^x$$

$$f(2) = 2^2 = 4 \quad g(2) = \left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

$$f(8) = 2^8 = 256 \quad g(8) = \left(\frac{1}{2}\right)^8 = \frac{1}{256}$$

$$f(2) * g(2) = 4 \cdot \frac{1}{4} = 1$$

## 4.3 Compound Interest

10/07/14

Define compound interest for a general number of periods.

$$f(t) = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$P = \$2,500$$

$$r = 4\%$$

$$t = 10 \text{ yr.}$$

$$n = 1, 4, 12, 365$$

$$FV = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$FV = 2500\left(1 + \frac{0.04}{1}\right)^{1 \cdot 10}$$

$$= 2500(1 + 0.04)^{10}$$

$$FV = \$3700.61$$

$$FV = 2500\left(1 + \frac{0.04}{4}\right)^{4 \cdot 10}$$

$$= 2500(1 + 0.01)^{40}$$

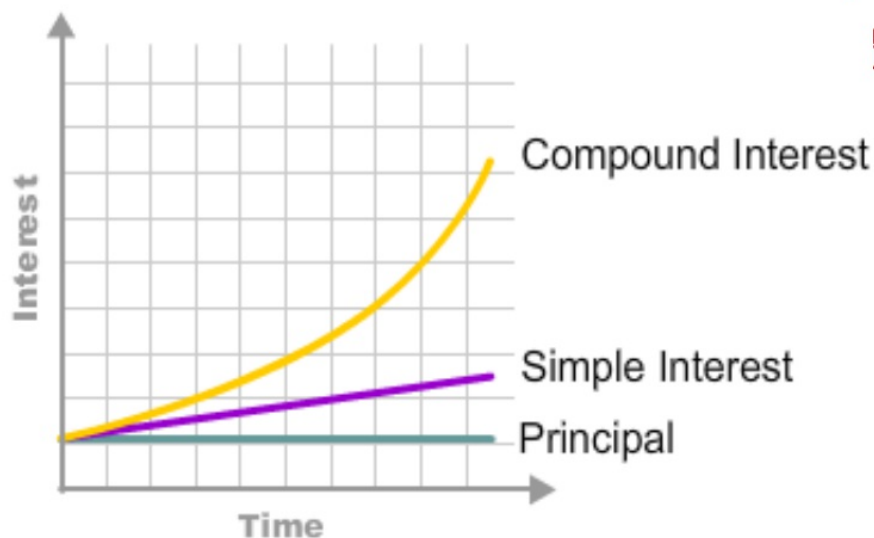
$$FV = \$3722.51$$

$$FV = 2500\left(1 + \frac{0.04}{12}\right)^{12 \cdot 10}$$

$$FV = \$3727.08$$

$$FV = 2500\left(1 + \frac{0.04}{365}\right)^{365 \cdot 10}$$

$$FV = \$3729.48$$





## 4.3 Compound Interest

10/07/14

IWBAT practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables and explore continuous compounding as an example of exponential growth. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.3 Compound Interest

10/07/14

### Compound interest table

Initial investment: \$12,000 at 10%

Frequency of compounding	5 years	10 years	15 years	20 years
Annually	\$19,326.12	\$31,124.91	\$50,126.98	\$80,730
Quarterly	\$19,663.40	\$32,220.77	\$52,797.48	\$86,514.81
Monthly	\$19,743.71	\$32,484.50	\$53,447.03	\$87,936.88
Daily	\$19,783.30	\$32,614.91	\$53,769.22	\$88,644.39

IWBAT practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables and explore continuous compounding as an example of exponential growth.

## 4.3 Compound Interest

10/07/14

Continuous compounding

$$f(t) = Pe^{rt}$$

$$P = \$2,500$$

$$r = 4\%$$

$$t = 10 \text{ yr.}$$

$$FV = Pe^{rt}$$

$$FV = 2500 e^{(0.04 \cdot 10)}$$

$$= 2500 e^{0.4}$$

$$FV = \$3729.56$$

IWBAT practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables and explore continuous compounding as an example of exponential growth.

## 4.3 Compound Interest

10/07/14

TVM solver (yellow calc.) Apex 4.3.1 p.7, 9, & 17

IWBAT practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables and explore continuous compounding as an example of exponential growth.

## 4.3 Compound Interest

10/07/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.3.2

Quiz 4.3.3

IWBAT practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables and explore continuous compounding as an example of exponential growth.

#### 4.4 The Rule of 72 (and 69)

10/08/14

Calculate compound interest.

Julia invested \$1,234 in 1996 a savings account with an annual interest rate of 1.2% compounded monthly. What should her account balance be in 2014?

$$FV = 1234 \left( 1 + \frac{0.012}{12} \right)^{18 \cdot 12}$$

$$FV = \$1529.55$$



## 4.4 The Rule of 72 (and 69)

10/08/14

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

#### 4.4 The Rule of 72 (and 69)

10/08/14

Calculate and estimate the amount of time for an investment to double.

How long will it take \$2,500 to double at an annual interest rate of 4%? Use the TVM solver.

$$N = ?$$

$$I\% = 4$$

$$PV = -2500$$

$$FV = 5000$$

$$C/Y = 1$$

$$PMT = 0$$

$$P/Y = 1$$

$$N = 17.67 \text{ yr}$$

$$17 \text{ yr } 8 \text{ mo}$$

## 4.4 The Rule of 72 (and 69)

10/08/14

### Rule of 72

If you save your money in an account with **annual interest rate**  $r$ , you can approximate the number of years needed to double your **principal** by

$$\frac{72}{r \cdot 100}$$

This approximation works for compounding periods up to weekly.

How long will it take \$2,500 to double at an annual interest rate of 4%?

$$\frac{72}{4} = 18 \text{ yr}$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

#### 4.4 The Rule of 72 (and 69)

10/08/14

To have \$1,000,000 by your 60th birthday, how much do you need to invest at 6% interest now? Solve using the Rule of 72.

$$\frac{72}{6} = 12 \text{ yr}$$

60 = 1,000,000 16 yo

$$48 = 500,000$$

$$36 = 250,000$$

$$\begin{cases} 24 = 125,000 \\ 16 = 63,000 \end{cases}$$

$$PV = 77,009$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

## 4.4 The Rule of 72 (and 69)

10/08/14

### Rule of 69

If you save your money in an account with annual interest rate  $r$ , you can approximate the number of years needed to double your principal by

$$\frac{69}{r \cdot 100}$$

Use this approximation for daily and continuous compounding.

*\$2,500 @ 4% doubles 17yr 3 mo.*

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.



## 4.4 The Rule of 72 (and 69)

10/08/14

Inflation (reduction in buying power)

Use the Rule of 72 to calculate how long it will take for your buying power to halve with a 1.9% rate of inflation. Please answer in years and months.

$$\frac{72}{1.9} = 37 \text{ yr } 11 \text{ mo}$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.



## 4.4 The Rule of 72 (and 69)

10/08/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.4.2

Quiz 4.4.3

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

## 4.5 Checking Accounts

10/09/14

Explain when to use the Rule of 72  
and when to use the Rule of 69.

rule:  $\frac{72}{r \cdot 100}$  <sup>Compounding</sup> annual, monthly, weekly  
rule  $\frac{69}{r \cdot 100}$  daily, compounded continuously

To predict the time needed to  
**DOUBLE**  
an investment.

## 4.5 Checking Accounts

10/09/14

IWBAT understand how checking accounts work, including interest and how to write a check. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.5 Checking Accounts

10/09/14

What is a checking account? Why use one?

Bank account which you can take money out of easily. If you keep the cash you may spend it too quickly.

IWBAT understand how checking accounts work, including interest and how to write a check.

## 4.5 Checking Accounts

10/09/14

**Understand the fees associated with a checking account.**

Swipe fee  
Inactivity fee  
→ Overdraft fee  
Check fee  
Phone check deposit fee  
ATM fee  
Service fee  
Cancelled Check fee  
Paper statement fee  
Online banking fee

IWBAT understand how checking accounts work, including interest and how to write a check.



## 4.5 Checking Accounts

### Parts of a check

10/09/14

The image shows a sample check with the following details and annotations:

- Sender:** ZACK MORIS, 13 BAYSIDE WAY, LOS ANGELOS, CA 90001 (circled in yellow).
- Check Number:** 101 (circled in yellow).
- Date:** Date 20 11-24/1 1210(3) (handwritten "Date" is circled in yellow).
- Payee:** PAY TO THE ORDER OF Poyce (handwritten "Poyce" is circled in yellow).
- Amount:** \$ #5 DOLLARS (handwritten "amount" is circled in yellow).
- Bank:** SEATTLE MAIN OFFICE, THE APEX BANK, 20 FAKE STREET, SEATTLE WA 98101 (circled in yellow).
- Memo:** MEMO H Wheeler (handwritten "H Wheeler" is circled in yellow).
- Signature:** SIGNED Signature (handwritten "Signature" is circled in yellow).
- Routing Number:** 0101 (circled in yellow).

IWBAT understand how checking accounts work, including interest and how to write a check.



## 4.5 Checking Accounts

10/09/14

Your \$950 rent is due on the first of the month to Speyside Properties. Fill out the check for next month's rent payment.

**ZACK MORIS**  
13 BAYSIDE WAY  
LOS ANGELOS, CA 90001

101

Nov 01, 2014

PAY TO THE ORDER OF Speyside Properties \$ 950.00

nine hundred and fifty 00/100 DOLLARS

SEATTLE MAIN OFFICE  
**THE APEX BANK**  
20 FAKE STREET, SEATTLE WA 98101

MEMO rent of november SIGNED [Signature]

⑆121000248⑆ 12345678⑈ 0101

IWBAT understand how checking accounts work, including interest and how to write a check.

## 4.5 Checking Accounts

10/09/14

### Check register

Check Number	Date	Description of Transaction	Payment/ Debit (-)	Fee	Deposit/ Credit (+)	Balance

Number	Date	Transaction	Withdrawal	✓	Deposit	
						\$ 2874.26
101	11-1	Speyside Prop.	950.00	✓		1924.26
	11-2	McDonalds	15.20	✓		1909.06
	11-5	Deposit Paycheck		✓	111.57	2020.63
	11-5	Cash Withdrawal	60.00			1960.63

Record the rent check in your register.

Your previous balance was \$2874.26.

IWBAT understand how checking accounts work, including interest and how to write a check.

## 4.5 Checking Accounts

### Check endorsements

10/09/14



IWBAT understand how checking accounts work, including interest and how to write a check.

## 4.5 Checking Accounts

### Deposit slip

10/09/14

**CHECKING DEPOSIT**

DEPOSIT TO THE ACCOUNT OF  
NAME \_\_\_\_\_

DATE \_\_\_\_\_

903

**YOUR BANK**

DEPOSITS SUBJECT TO CORRECTION BY PROOF DEPARTMENT  
ALL ITEMS CREDITED SUBJECT TO THE FINAL PAYMENT

PLEASE BE SURE EACH ITEM IS  
PROPERLY ENDORSED. USE OTHER  
SIDE TO LIST ADDITIONAL CHECKS

ACCOUNT NUMBER  
\* [ ] [ ] 1 2 3 4 5 6 7 8

⑆ 987654321 ⑆

☒ CASH

SUBTOTAL → 261.38

\*LESS CASH RECEIVED → 100.00

\$ 161.38

03

IWBAT understand how checking accounts work,  
including interest and how to write a check.



## 4.5 Checking Accounts

10/09/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.5.2

Quiz 4.5.3

<http://goo.gl/forms/11Z0ix8A9o>

IWBAT understand how checking accounts work,  
including interest and how to write a check.



## 4.6 Balancing your Checkbook

10/10/14

When might you incur service fees or overdraft charges on a checking account?

- ↓
  - when you go over the limit on your account
- when you create an account
- when your account drops below the minimum balance.

## 4.6 Balancing your Checkbook


10/10/14

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.6 Balancing your Checkbook

10/10/14

### Learning how to read bank statements.

		<b>FIRST BANK OF APEX</b> 1234 Main St. City, State		CHECKING ACCOUNT STATEMENT Page : 1 of 1	
JOHN DOE 1111 Balance St. City, State		Statement period 2010-10-09 to 2010-11-08		Account No. 123-45-678	
Date	Description	Ref.	Debits	Credits	Balance
2010-10-08	Previous balance				.55
2010-10-14	Payroll Deposit - HOTEL			694.81	695.36
2010-10-14	Web Bill Payment - MASTERCARD	9685	200.00	+	495.36
2010-10-16	ATM Withdrawal - INTERAC	3990	21.25		474.11
2010-10-16	Fees - Interac		1.50		???
*** Totals ***			???	???	

101

102

103\* Outstanding

104

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

## 4.6 Balancing your Checkbook

10/10/14

Reconciliation - Comparing your check register to the bank statement and getting them to agree

What you need to reconcile:

1. deposits (direct deposit or otherwise)
2. interest
3. checks
4. bank fees
5. withdrawals from an ATM
6. online bill payments
7. debit card transactions
8. outstanding checks
9. transfer of funds

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

## 4.6 Balancing your Checkbook

### Reconciling tools

10/10/14

#### Verifying That Two Groups of Numbers May Add Up to the Same Value

1. Add all *digits* of all the numbers in each column.
2. Do this again if needed until you reach a single digit.
3. Compare the two single digits you get in the end.

If they do not agree, then the numbers in the two columns cannot add up to the same value.

Imagine the numbers in the first column are 23, 14, and 9, and the second column contains 20 and 27. You want to know if the columns are balanced — that is, do the numbers in the first column add up to 47?

Handwritten calculation showing the process of reducing numbers to a single digit for verification:

23	5	20	2
14	5	27	9
9	9		<hr/>
	<hr/>		11
	14		(2)
	<hr/>		
	10		
	(1)		

A double slash (//) is drawn between the two columns of results, indicating they do not agree.

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.



## 4.6 Balancing your Checkbook

10/10/14

### Transposed numbers

Columns should add to the same total, but do not. Subtract column sums. If the difference is divisible by 9, look for transposed numbers (e.g. 34 instead of 43).

$$\begin{array}{r} \textcircled{23} \\ 141 \\ 9 \\ \hline 46 \end{array}$$

$$\begin{array}{r} \textcircled{32} \\ 141 \\ 9 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 29 \quad 92 \\ 63 = 9 \end{array}$$

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

## 4.6 Balancing your Checkbook

10/10/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.6.2

Quiz 4.6.3

<http://goo.gl/forms/s/11Z0ix8A9o>

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

## 4.7 Comparing Checking Accounts

10/13/14

What does it mean to reconcile your checkbook?

You balance your check register  
with your bank statement  
so they agree.

## 4.7 Comparing Checking Accounts

10/13/14

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.7 Comparing Checking Accounts

10/13/14

**Compare two checking accounts based on various factors.**

- Debit card?
- Per check fee?
- ATM fee?
- Monthly service fee?
  - Minimum balance?
  - Direct deposit?
- Interest?
  - Final balance?
  - Average monthly balance?

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.



## 4.7 Comparing Checking Accounts

10/13/14

### Typical account features

Account Features	Basic Free Checking	Student Checking	Regular Checking	Interest Checking
ATM access	FREE ✓	FREE ✓	FREE ✓	FREE ✓
Online Bill Pay E-mail Alerts Online Check Images Online Statements	FREE ✓	FREE ✓	FREE ✓	FREE ✓
Earns Interest				YES ✓
Monthly Service Fee	None with direct deposit, or 5 or more debit card purchases during each statement period; otherwise \$6	None, must be a student 18+ years old	Waived with \$1000 minimum checking balance; otherwise \$12	Waived with \$1500 minimum checking balance; otherwise \$20
Debit Card	FREE ✓	FREE ✓	FREE ✓	FREE ✓

Fractional reserve banking -

A type of banking system in which only a fraction of bank deposits are backed by actual cash on hand. The rest of the money deposited is not available for immediate withdrawal.

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

## 4.7 Comparing Checking Accounts

10/13/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.7.2

Quiz 4.7.3

<http://goo.gl/forms/11Z0ix8A9o>

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

## 4.8 Savings Accounts

10/14/14

What would a good checking account for you include?

No fees  
minimum balance  
online banking  
interest

## 4.8 Savings Accounts

10/14/14

**Explain the difference between a savings and a checking account.**

Checking - money comes out easily

Savings - have to move your money around to have access to it

S : larger balance than chk.

S : has interest (few chk. acct. do)

Chk : checks, debit card

## 4.8 Savings Accounts

10/14/14

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.



## 4.8 Savings Accounts

### APR vs. APY

10/14/14

**APR** is the annual percentage rate. It is the annual rate of interest without taking into account the number of compounding periods.

**APY** is the annual percentage yield. This is a measure of the full amount of money earned over a year, which includes any compound interest.

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

## 4.8 Savings Accounts

10/14/14

**APY** is higher than **APR** if there is more than one compounding period in a year, so *lenders* often express their interest rates in the form of APR since it is lower. *Borrowers* (such as banks and other savings institutions) often express interest rates in APY since it is higher.

$$r = \text{APR}$$

$$r = 1.9\%$$

$$C/y = 52$$

$$\text{APY} = \left(1 + \frac{r}{n}\right)^n - 1$$

$$\text{APY} = \left(1 + \frac{0.019}{52}\right)^{52} - 1$$

$$\text{APY} = 1.92\%$$

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

## 4.8 Savings Accounts

10/14/14

"interest calculated on an annual basis,  
accrued daily, and paid monthly."

7) The beginning balance of Otto's savings account for the month of May was \$1800, and it remained this way for the first 12 days of the month. On May 13, Otto made a withdrawal of \$400, so his balance changed, and it remained the same for a total of 8 days. On May 21, Otto made a deposit of \$1200, so his balance changed again, and it remained the same for a total of 11 days to finish out the month. If Otto's savings account has an APR of 7.3%, calculates interest daily, and pays interest at the end of the month, how much did Otto earn in interest in the month of May?

$$1800 \cdot 12 \cdot \frac{0.073}{365} = \$4.32$$

$$1400 \cdot 8 \cdot \frac{0.073}{365} = \$2.24$$

$$2600 \cdot 11 \cdot \frac{0.073}{365} = \$5.72 +$$

---

$$\$12.28$$

$$\$2612.28$$

$$I = Prt$$

Simple

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

## 4.8 Savings Accounts

10/14/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.8.2

Quiz 4.8.3

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.



## 4.9 Comparing Savings Accounts

10/15/14

What is the difference between APR and APY?

APR

APY

No compounding

Compounding

if  $c/y > 1$

$APR < APY$



## 4.9 Comparing Savings Accounts

10/15/14

### Understanding how FDIC insurance works.

The FDIC insures deposits to all types of accounts including:

- checking accounts
- basic savings account
- money market
- certificate of deposit (CD)

<https://www.fdic.gov/deposit/>

What is covered and how much?

If you have \$400,000, how should you divide it up?  
Or should you?

## 4.9 Comparing Savings Accounts

10/15/14

IWBAT compare two savings accounts based on various factors and examine various types of savings accounts based on risk and liquidity. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.9 Comparing Savings Accounts

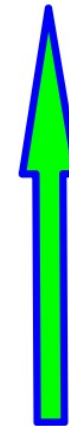
10/15/14

### Types of Savings Accounts

- piggy bank
- basic savings account
- money market savings
- certificate of deposit (CD)
- savings bond



Increasing  
Interest %



Increasing  
Liquidity

Liquidity - the ability to access cash quickly

General rule: the higher the interest rate, the lower the liquidity

IWBAT compare two savings accounts based on various factors and examine various types of savings accounts based on risk and liquidity.

## 4.9 Comparing Savings Accounts

10/15/14

Vocabulary: Appendix A.3 Key Terms

Practice: 4.9.2

Quiz 4.9.3

IWBAT compare two savings accounts based on various factors and examine various types of savings accounts based on risk and liquidity.

## 4.10 Savings & Checking Wrap up

10/16/14

How does FDIC insurance work?



IWBAT demonstrate my proficiency in this unit on practice problems before the unit test. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

## 4.10 Savings & Checking Wrap up

10/16/14

### Complete Practice 4.10.2

Simple Interest

$$I = Prt \quad FV = P + Prt$$

Compound Interest

$$A(t) = P(1 + r/n)^{(n \cdot t)}$$

$$APY = (1 + r/n)^n$$

IWBAT demonstrate my proficiency in this unit  
on practice problems before the unit test.

## 4.10 Savings & Checking Wrap up

### Final questions on 4.10.2?

10/17/14

IWBAT demonstrate proficiency on my unit test.

**Turn in your banking presentation by  
3PM today.**  
(e-mail, thumb drive, or shared Google doc.)

**Complete Unit Test 4.10.4 (CST)**

IWBAT demonstrate proficiency on my unit test.